**THAT WHICH IS CLAIMED IS:**

1. An implantable system for the defibrillation of the atria of a patient's heart, said system comprising:

a first catheter configured for insertion into the right atrium of said heart without extending into the right ventricle of said heart;

a first atrial defibrillation electrode carried by said catheter and positioned at the atrial septum of said heart;

a second atrial defibrillation electrode which together with said first atrial defibrillation electrode provides a pair of atrial defibrillation electrodes; and

a pulse generator operatively associated with said pair of atrial defibrillation electrodes for delivering a first atrial defibrillation pulse.

2. An implantable system according to claim 1, wherein said electrode is configured to be positioned within a trans-septal puncture in said atrial septum.

3. An implantable system according to claim 1, wherein said first catheter has a distal end portion and a terminal screw connected to said distal end portion, whereby said first electrode may be fixed to said atrial septum with said terminal screw.

4. An implantable system according to claim 1, wherein said first catheter has a distal end portion and a retractable hook connected to said distal end portion, whereby said first electrode may be fixed to said atrial septum with said hook.

5. An implantable system according to claim 1, wherein said first catheter has a distal end portion and an expandable member connected to said distal end portion, with said first electrode connected to said expandable member.

6. An implantable system according to claim 1, further comprising a second catheter configured for insertion through the coronary sinus and into a vein on the surface of the left ventricle of said heart, wherein said second electrode is connected to said second catheter.

7. An implantable system according to claim 1, further comprising an implantable housing having an external surface portion, with said pulse generator contained within said housing, and with said second electrode connected to said external surface portion of said housing.

8. An implantable system according to claim 1, further comprising a second catheter, with said first catheter connected to said second catheter.

9. An implantable system according to claim 8, wherein said second catheter is configured for positioning in the right ventricle or coronary sinus of said heart.

10. A catheter assembly useful for the defibrillation or cardioversion of a patient's heart, said assembly comprising:

a first transveneous catheter configured for insertion into the heart of said patient, said first transvenous catheter having a proximal end portion, a distal end portion, and an elongate intermediate portion therebetween, and with said first transveneous catheter having a first electrode connected thereto;

a second transveneous catheter configured for insertion into the heart of said patient, said second transveneous catheter having a proximal end portion, a distal end portion, and an elongate intermediate portion therebetween; and

a connecting member attached to said first transveneous catheter, with said connecting member connected to said second transveneous catheter intermediate portion.

11. A catheter assembly according to claim 10, wherein said connecting member is attached to said first transveneous catheter distal end portion.

12. A catheter assembly according to claim 10, wherein said second transveneous catheter is configured for insertion into the coronary sinus.

13. A catheter assembly according to claim 10, wherein said second transveneous catheter is configured for insertion into the right ventricle.

14. A catheter assembly according to claim 10, said second transveneous catheter having at least one electrode connected thereto.

15. A catheter assembly according to claim 10, wherein said connecting member is permanently connected to said second transveneous catheter intermediate portion.

16. A catheter assembly according to claim 10, wherein said connecting member is releasably connected to said second transveneous catheter intermediate portion.

17. A catheter assembly according to claim 10, wherein said connecting member comprises a retractable loop.

18. A catheter assembly according to claim 10, wherein said connecting member comprises an elastic loop.

19. A catheter assembly according to claim 10, wherein said first electrode is connected to said first transveneous catheter intermediate portion.

20. A method for the defibrillation or cardioversion of the heart of a patient in need thereof while minimizing the voltage of defibrillation pulses to be delivered, said method comprising the steps of:

positioning first and second defibrillation electrodes in operable association with the heart of said subject, said first and second defibrillation electrodes defining a gradient field in said heart, said gradient field including a region of said heart to be defibrillated;

positioning a third electrode in said gradient field between said first and second electrodes; and then

concurrently delivering *(a)* a first defibrillation pulse between said first and third electrode and *(b)* a second defibrillation pulse between said second and third electrodes; with said first and second defibrillation pulses together effective to defibrillate said heart;

and with the voltage required for each of said first and second defibrillation pulses being less than the voltage necessary for a single defibrillation pulse delivered between said first and second electrodes that is effective to defibrillate said heart.

21. A method according to claim 20, wherein said first electrode is carried by a transveneous catheter.

22. A method according to claim 20, wherein said second electrode is carried by a transveneous catheter.

23. A method according to claim 20, wherein said third electrode is carried by a transveneous catheter.

24. A method according to claim 20, wherein said third electrode is an atrial septum electrode.

25. A method according to claim 20, wherein said patient is afflicted with atrial fibrillation.

26. A method according to claim 20, wherein said patient is afflicted with ventricular fibrillation.

27. A method according to claim 20, wherein said first and second defibrillation pulses are delivered simultaneously.

28. A method according to claim 20, wherein said first and second defibrillation pulses are delivered sequentially.

29. A method according to claim 20, wherein said second defibrillation pulse is delivered within 500 milliseconds of said first defibrillation pulse.

30. A method according to claim 20, wherein each of said first and second defibrillation pulses are not greater than 150 volts in magnitude.

31. A method according to claim 20, wherein each of said first and second defibrillation pulses are not greater than four Joules in magnitude.

32. A method for the defibrillation or cardioversion of the atria of the heart of a patient in need thereof, said method comprising the steps of:

positioning a first defibrillation electrode in the right atrium, superior vena cava or right ventricle of said subject;

positioning a second defibrillation electrode in the coronary sinus or a vein on the surface of the left ventricle of said heart;

positioning a third electrode at the atrial septum of said heart; and then

concurrently delivering *(a)* a first defibrillation pulse between said first and third electrode and *(b)* a second defibrillation pulse between said second and third electrodes;

with each of said first and second defibrillation pulses having an energy not greater than four Joules,

and with said first and second defibrillation pulses being delivered within 500 milliseconds of each other.

33. A method according to claim 32, wherein said first electrode is carried by a transveneous catheter.

34. A method according to claim 32, wherein said second electrode is carried by a transveneous catheter.

35. A method according to claim 32, wherein said third electrode is carried by a transveneous catheter.

36. A method according to claim 32, wherein said first and second defibrillation pulses are delivered simultaneously.

37. A method according to claim 32, wherein said first and second defibrillation pulses are delivered sequentially.

38. A method according to claim 32, wherein:

said first and second electrodes are carried by a first transveneous catheter, said first transveneous catheter having an intermediate portion;

said third electrode is carried by a second transveneous catheter, said second transveneous catheter having a distal end portion; and

said second transveneous catheter distal end portion is connected to said first transveneous catheter intermediate portion.

39. An implantable system for the defibrillation or cardioversion of a patient's heart, said system comprising:

first and second defibrillation electrodes configured for positioning in operable association with the heart of said subject, said first and second defibrillation electrodes when so positioned defining a gradient field in said heart between said first and second electrodes and in a region to be defibrillated;

a third defibrillation electrode configured for positioning in said gradient field between said first and second electrodes; and

a pulse generator operatively associated with said first, second and third defibrillation electrodes and configured for concurrently delivering *(a)* a first defibrillation pulse between said first and third electrode and *(b)* a second defibrillation pulse between said second and third electrodes, with the voltage required for each of said first and second defibrillation pulses being less than the voltage required for a single defibrillation pulse delivered between said first and second electrodes.

40. A system according to claim 39, further comprising a transveneous catheter, wherein said first electrode is carried by said transveneous catheter.

41. A system according to claim 39, further comprising a transveneous catheter, wherein said second electrode is carried by said transveneous catheter.

42. A system according to claim 39, further comprising a transveneous catheter, wherein said third electrode is carried by said transveneous catheter.

43. A system according to claim 39, further comprising first and second transveneous catheters, wherein said first, second and third electrodes are carried by said first and second transveneous catheters, and wherein said first transveneous catheter is fixed to said second transveneous catheter.

44. A system according to claim 43, wherein said third electrode is an atrial septum electrode.

45. A system according to claim 39, further comprising first and second transveneous catheters, wherein:

said first and second electrodes are carried by said first transveneous catheter, said first transveneous catheter having an intermediate portion;

said third electrode is carried by said second transveneous catheter, said second transveneous catheter having a distal end portion; and

said second transveneous catheter distal end portion is connected to said first transveneous catheter intermediate portion.

46. A system according to claim 45, wherein said third electrode is an atrial septum electrode.

47. In an implantable system for the cardioversion or defibrillation of the atria or ventricles of a patient's heart, which system is configured to deliver at least one ventricular therapeutic pulse to the ventricles of said patients heart through a superior vena cava electrode, the improvement comprising configuring said system to deliver at least one atrial therapeutic pulse to the atria of said patient's heart through said superior vena cava electrode, and with the energy of said atrial therapeutic pulse being not more than half the energy of said ventricular therapeutic pulse.

48. An implantable system according to claim 47, said improvement further comprising:

including a right atrial electrode, a distal coronary sinus electrode, and a coronary sinus ostium electrode with said system,

configuring said system to deliver a first therapeutic pulse to said patient's atrial between said right atrial electrode and said distal coronary sinus electrode, and

configuring said system to deliver a second therapeutic pulse to said patient's atria between said superior vena cava electrode and said coronary sinus electrode.

49. A system according to claim 48, wherein said first and second therapeutic pulses to said patient's atria are each not greater than 200 volts.

50. An implantable system according to claim 47, said improvement further comprising:

including a right atrial electrode, a distal coronary sinus electrode, and a coronary sinus ostium electrode with said system,

configuring said system to deliver a first therapeutic pulse to said patient's atria between said superior vena cava electrode and said coronary sinus electrode; and

configuring said system to deliver a second therapeutic pulse to said patient's atrial between said right atrial electrode and said distal coronary sinus electrode.

51. A system according to claim 50, wherein said first and second therapeutic pulses to said patient's atria are each not greater than 200 volts.

52. A method for treating an atrial arrhythmia in a patient in need thereof, comprising:

*(a)* positioning a first therapeutic electrode in the superior vena cava of said patients heart, a second therapeutic electrode in the right atrium of said patient's heart, a third electrode in the distal coronary sinus of said patient's heart, and a fourth therapeutic electrode at the coronary sinus ostium of said patient's heart;

*(b)* delivering at least one therapeutic pulse to said patient's atria between said second and third electrodes; and

*(c)* delivering at least one therapeutic pulse to said patient's atria between said first electrode and said fourth electrode.

53. The method according to claim 52, wherein step *(b)* is carried out prior to step *(c)*.

54. The method according to claim 53, wherein step *(c)* is carried out prior to step *(b)*.